

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
16 June 2005 (16.06.2005)

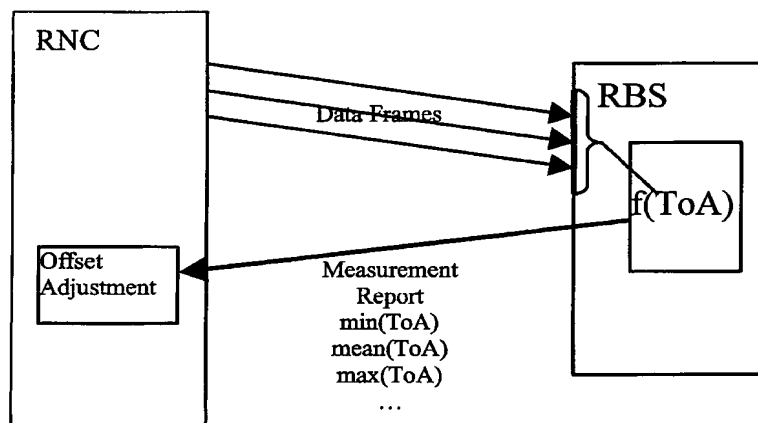
PCT

(10) International Publication Number  
**WO 2005/055471 A1**

- (51) International Patent Classification<sup>7</sup>: **H04B 7/26**, H04Q 7/30
- (21) International Application Number: PCT/EP2003/050881
- (22) International Filing Date: 24 November 2003 (24.11.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (71) Applicant (for all designated States except US): **TELEFONAKTIEBOLAGET LM ERICSSON** (publ) [SE/SE]; S-164 83 Stockholm (SE).
- (72) Inventors; and
- (73) Inventors/Applicants (for US only): **SÅGFORS, Mats**, Fredrik [FI/FI]; Ravalsvägen 8C 13, FIN-02400 Kyrkslätt (FI). **PEISA, Janne, Johannes** [FI/FI]; Metsäpirtintie 12D17, FIN-02130 Espoo (FI).
- (74) Agent: **LIND, Robert**; Marks & Clerk, 4220 Nash Court, Oxford Business Park South, Oxford OX4 2RU (GB).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— with international search report

[Continued on next page]

(54) Title: FRAME SYNCHRONISATION IN A RADIO ACCESS NETWORK



(57) Abstract: A method of optimizing the timing offsets with which data frames are transmitted over the Iur/Iub interfaces of a UMTS Terrestrial Radio Access Network, UTRAN. The method comprises, for a given Iur/Iub interface or set of Iur/Iub interfaces over which identical user plane data is to be sent, defining a duration of a data frame receiving window for use by the receiving node(s), transmitting data frames from a sending node with an initial timing offset sufficient to ensure a likelihood that the frames will be received at the or each receiving node within the defined receiving window, reducing the timing offset at the sending node in a stepwise manner, and adjusting the timing offset at the sending node in response to the receipt of late Time of Arrival error reports at the sending node. In a second embodiment, the frame synchronisation of frames corresponding to speech services and data services is carried out by delaying the frames corresponding to speech services a fixed delay and the frames corresponding to data services a variable delay based on a received time of arrival feedback.

WO 2005/055471 A1



---

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*